

The Mining Journal

RAILWAY AND COMMERCIAL GAZETTE

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

No. 399 --Vol. XIII.]

LONDON: SATURDAY, APRIL 15, 1843.

[PRICE 6D.]

NORTH TOWAN MINE, St. Agnes, Cornwall.—The SALE of this MINE and MATERIALS, advertised to take place at the Jamaica Coffee-house, in London, on the 15th inst., is POSTPONED till further notice. Dated April 12.

HIGHLY IMPORTANT SALE.
FENTON-PARK COLLIERY, STAFFORDSHIRE POTTERIES.
TO COAL OWNERS, ENGINEERS, IRON FOUNDERS, AND MINE AGENTS.—JOHN HIGGINSBOTTOM respectfully announces that he is favoured with the commands of the Fenton-park Colliery Company to DISPOSE OF, BY PUBLIC AUCTION, on Friday, the 21st day of April, the entire of their powerful and valuable STEAM WINDING AND PUMPING ENGINES, BOILERS, PITGEARING, CHAINS, ROPES, MACHINERY, and IMPLEMENTS, recently in use at that important colliery, the lease of which is now terminated. The sale to commence at Eleven for Twelve o'clock precisely.

1. Four small cast iron spur wheels.
2. One spur wheel, 6 feet diameter.
3. One ditto, 7 feet ditto.
4. One ditto, 4 ft. 6 in. ditto.
5. Four small ditto.
6. One flat-rope pulley wheel, 3 ft. 6 in. diameter.
7. Cast-iron grindstone frame.
8. One bevelled spur wheel, 4 ft. 6 in. diameter.
9. One spur wheel, 6 feet diameter.
10. One ditto ditto, 7 feet diameter, with shaft, 10 feet long.
11. Driving wheel shaft and crank, to match lot 10.
12. One T-bolt, 13 feet beam by 8 ft. 6 in. standard.
13. Double bell crank, to work 4-foot stroke.
14. One V-bolt, 4 ft. 9 in. on arm.
15. One cast-iron winding-engine, beam 13 feet long.
16. One cast-iron connecting rod, 14 feet long.
17. One cast-iron fly wheel, in two halves, 14 feet diameter.
18. One cast-iron cylinder, 6 ft. 6 in. long, 32 in. diameter.
19. Wrought-iron open topped boiler, 6 feet diameter.
20. Two tons of round iron chain.
21. 275 yards of flat chain.
22. One windhorse and short pipe, 10 in. diameter.
23. Seventeen cast-iron pump trees, 12 in. diameter.
24. Twenty cast-iron pump trees, 10 in. diameter, including two working barrels, two clack doorkieces, two bucket doorkieces, two windhorses.
25. Thirty-three cast-iron pump trees, 11 in. diameter, and two doorkieces.
26. Three clack doorkieces, two bucket doorkieces, 12 in. diameter.
27. A portable direct-acting high-pressure steam-engine, cylinder 14½ inches.
28. Ditto ditto.
29. Wrought-iron boiler, 27 feet long.
30. An atmospheric steam-engine, 21 in. cylinder, wrought-iron boiler & underwork.
31. A powerful single-acting pumping-engine, 63 inch cylinder, 8 feet stroke, by Wherratt, of Manchester, two large wrought-iron circular boilers, with steam and feed pipes, air-pump, and condenser, two sets of 12-inch cast-iron pump trees, fifty-three yards long each, with clackdores and working barrels, about 120 yards of wood pump-rod, 7½-inch and 6-inch cast-iron fourbolts, iron plates, wood floors, and ballustrade, clackdores, winding-crank, for raising cylinder cover, massive wood beams, stone seating, and holding down pins, outer gallery and ballustrade, capstans and shears, with 44-inch rope, 220 yards long.
32. A capital winding steam-engine, by Wherratt, 31-inch cylinder, air-pump and condenser, fly-wheel, cilia, and holding down pins, three wagon-shaped boilers, steam and feed pipes, winding drums, shafts, and arms.
33. Three pit frames, pulleys, and waggons.
34. An excellent winding steam engine, 31-inch cylinder, air-pump and condenser, wrought-iron boiler, steam and feed pipes, winding drums, shafts and arms, cilia and bolts.
35. Two pit frames, pulleys, and waggons.
36. Wrought-iron wagon-shaped boiler, 12 ft. 6 in. by 4 ft. 6 in.
37. An atmospheric winding steam-engine, 30-inch cylinder, with air-pump and condenser, two boilers, steam and feed pipes.
38. One pit wagon.
39. A useful atmospheric winding steam-engine, with condenser, 24-inch cylinder, cast-iron boiler, steam and feed pipes, winding drum shaft, and arms.
40. One weighing machine.
41. One ditto ditto.
42. One ditto ditto.
43. Several tons of cast-iron tramrails.

For further particulars, or to view the property, apply on the premises, to Mr. Aaron Barton, agent to the Fenton-park Colliery Company, District Bank, Longton, March 20.

VALUABLE MINE SHARES, in Flintshire.—TO BE SOLD, BY AUCTION, by Mr. JAMES WILLIAMS, at the White Horse Hotel, in the town of Holywell, in the county of Flint, on Wednesday, the 10th of May, at Two o'clock in the afternoon, subject to such conditions as shall then be produced, and in the following lots:—

LOT I.
THREE SIXTEENTH SHARES OF THE TERFYN LEVEL LEAD MINE, situated at the east end of, and adjoining, the celebrated Talargoch Mine, in the county of Flint. A strong vein of ore has already been discovered, by means of a level, but that not being deep enough to lower the mine effectively, a second, and deeper, level is now driving. This mine is in one of the best mineral districts, and is esteemed a most promising adventure. The ground leased to the company comprises upwards of 600 acres.

LOT II.
FIVE TWENTY-NINTH SHARES OF THE TALACRE LEAD MINE, which is a continuation of the above, and is worked by means of an old level, which has been recently opened to one of the veins producing ore. Another level is now in progress, and has already been driven upwards of 500 yards, with every prospect of cutting another vein in a short time. This mine is considered a very valuable one, and there is every reason to believe it will very soon be in profitable operation. The ground leased to this company comprises upwards of 500 acres.

LOT III.
FOUR SIXTEENTH SHARES OF THE BRYNFOR-HALL LEAD MINE, on the west end of, and adjoining, the well-known Mynydd Mawr, near Holywell.

LOT IV.
FIFTY-EIGHT FIVE-TWELFTHS OF 47 SHARES OF THE HOLYWELL LEVEL MINE—near Holywell, aforesaid.

Further particulars may be obtained on application to Thomas Harrison, Esq., of the town of Holywell, or Messrs. Roberts and Son, solicitors, in Flint.

MAESTEG IRON WORKS AND MARGAM TIN PLATE WORKS, Glamorganshire.—These TWO IMPORTANT WORKS, now in actual operation, ARE FOR SALE, BY PRIVATE TREATY, up to the 24th April inst. The Maesteg Works consist of two blast-furnaces, with steam engines, of 60-horse power, and have an ample supply of coal and iron ore, extending upwards of 100 acres of land. Several veins of black-band ironstone, of rich produce, have recently been discovered on this property. The Margam Tin Works are adapted to the making of tin plates for work. The water-power is considerable, and the whole of the machinery in good working order.

Printed particulars may be had on application to Mr. David Rowland, solicitor, White Lion Court, Cornhill, London, or to Mr. Wm. Lewis, solicitor, South. Offers to purchase must be sent sealed, indorsed, "Proposals for Purchase of the Maesteg Works," and enclosed under cover, addressed to the said Mr. William Lewis, on or before the 24th April inst.

The works may be inspected by applying to Messrs. Motley & Co., on the premises.

TO BE SOLD, BY PRIVATE CONTRACT, the BOTSTONE MINE, situated near Leek, in the county of Stafford, together with the whole of the very VALUABLE MACHINERY, consisting of a powerful WATER-WHEEL, forty yards of 12-inch pump, together with rods, clacks, and buckets, all complete; 150 yards of iron shaft rods, with pulleys, &c.; two engine beams, double powered crane, capstan, with arms and rope; drawing machine and chain; one set of slings, with six heads; and numerous other valuable implements, two large pair of excellent bellows, and numerous other materials, complete for drawing, crushing, and drawing.

This mine lies within one mile and a half from the celebrated Barmston mines, that produce excellent wealth to its owners the Duke of Devonshire, and has produced upwards of 100 tons of lead ore, by working 18 yards below the old level—this whole of which is richly studded with the mine, with a promising prospect of future adventure; there is also a great quantity of clay ore in different parts of the mine, that may be raised at a trifling expense, on account of the excellent location of the mine, having a plentiful supply of water throughout the year. One part of the mineral field is held by lease for twenty-one years, from Sir George Cress, Bart., ten years of which are unexpired, at 1-10th duty; the other part of the property belongs to the proprietors of the mine, which may be bought together with the mine and materials.

For further particulars, and to be sold for the same, apply to Mr. George Tappin, Esq., Barmston, near Leek.

IMPORTANT PATENT IMPROVEMENT IN CHRONO-METERS AND WATCHES.—E. J. BENT, of STRAND, who obtained the high distinction of receiving the Government Award for the distinguished performance of the best chronometer ever submitted to twelve months' public trial, begs to announce the public that the MANUFACTURE of his WATCHES, CHRONOMETERS, and CLOCKS, is secured to him by THREE SEPARATE PATENTS, respectively granted in 1837, 1840, and 1842.—After Lower Watchers, provided to four trials, off 10. each; in good cases from 20 to 400 guineas.—Good Chronometers, with gold cases, from 40 to 100 guineas.—Good Watches, with gold cases, from 10 to 20 guineas.—Good Watches, with steel cases, from 5 to 10 guineas.—A new ready for circulation.

INVESTMENT.—Mr. ENGLISH is authorised to negotiate for the INTEREST OF ONE-THIRD in a PROPERTY, which not only pays full 10 per cent. on the capital employed at the present moment, but holds out advantages to the extent of threefold its present return. The sum of £2000 will be required, merely for floating capital, on the advance of which an interest, to the extent of one third, will be at once secured in the property, on which nearly £10,000 has been already expended.—For particulars apply personally to Mr. English, 25, Fleet-street, London.

WANTED, A PARTNER, with a small capital, in an ENGINEERING ESTABLISHMENT, in the centre of a coal field, and within a short distance of a shipping port. One who could render assistance in the management would be preferred.—Apply to Mr. English, office of the Mining Journal, 25, Fleet-street, London, of whom every particular may be obtained, and reference given to the principal.

CRUSHER.—A COPPER CRUSHER IS WANTED, complete.—Apply by letter, stating particulars and price, to James Wyle, Esq., Tregothnan Concess Mines, St. Day, near Truro, Cornwall.

CULLENTRAGH PARK LEAD MINING COMPANY.—Capital £5000, in 1000 shares of 5s each.—Deposit £1 10s. per share. This company is formed for the purpose of working the veins of the celebrated LEAD MINE OF GLENMALURK, in the county of WICKLOW, in Ireland, on the line of their extension into the adjoining tract of Cullenragh Park, which is granted by the Earl of Meath, at a Royalty of 1-10th, and possesses ample water-power and other local advantages.

A plan of the mine, with specimens of ores, may be seen, and every information obtained, on reference to Mr. Henry Thomas, Mineral Agency Office, 6, George-yard, Lombard-street, to whom application for shares is to be made.

BLUE LIAS LIME.—A DEPOT IS OPENED FOR THE SALE OF THE ABOVE ARTICLE, both LUMP and GROUND, for concreting and cement. FROM MR. GREAVES'S CELEBRATED QUARRIES, Southam, Warwickshire, and, in consequence of the reduction of tonnage on the canals, will be OFFERED AT THE SAME PRICE AS LIME FROM DORSET.

Blue Lias Wharf, Paddington.

N.B.—Some blue stone, and blue and white diamond paving, for floors, from the same quarries.

IRON TRADE.—TO CAPITALISTS.—Referring to my advertisement in a former Number of the Mining Journal, bearing an invitation to Capitalists to join me in the erection of Blast Furnaces and Mills, in the centre of Germany, for the manufacture of 15,000 tons (per annum) of rails, wanted for the construction of the German railways, I beg to state, in reply to questions put to me from various quarters, that MY MINING PROPERTY, for the service of the establishment proposed, CONSISTS OF COAL-FIELDS, to the extent of three English square miles, in the largest of which there are two strata of excellent coking coal, of seven to eight feet and of six feet thickness. MY ORE-FIELDS are the largest and most valuable in all central Germany; they cover an area of more than thirty English square miles. The ores are excellent, yielding from 40 to 60 per cent. metal, and in quantity they are literally inexhaustible.

Persons who wish to treat with me best come over, next spring, and inspect property and localities.

Proprietor of Mines and Manufactories, at Hildburghausen, in Saxony.

RUSSIAN STEEL IRON.—"OLD SABLE"—C C N D.—The UNDERIGNED being the SOLE AGENTS of the Messrs. DE DEMIDOFF in England, the SOLE MARK OF IRON can only be OBTAINED through them.

CHARLES GRAHAM & Co., 20, King's Arms-yard, London.

GRAHAM BROTHERS, 15, High-street, Hull.

FOR SALE, BY PRIVATE CONTRACT, on the ROSEWALL HILL MINE, one and a half mile from St. Ives, in Cornwall, THREE STEAM-ENGINES, all new only three years ago; No. 1, a 30-inch cylinder PUMPING-ENGINE, 5-foot stroke in the cylinder and 7-foot in the pump, with all wood work complete, including doors and windows and first piece of connection rod; No. 2, a STAMPING-ENGINE, on Sims's combined cylinder principle—40-horse power. The consumption of coal with this engine never exceeded 2½ lbs. per horse power per hour; No. 3, a WINDING-ENGINE, 20-inch, double power, Boulton and Watt engine—8-foot stroke, with winding apparatus (iron) complete. The whole of these engines are on the most modern construction, made of the best material and workmanship; are only one and a half mile from a good shipping port, and may be had very cheap.—Applications to be made to Mr. Nicholas Trevellick, of Camborne, to Mr. James Sims, engineer, at Redruth, or to Mr. English, 25, Fleet-street, London. Redruth, Dec. 2.

TO ENGINE-BUILDERS AND PUMP-MAKERS.—PALMER AND PERKINS' PATENT PISTON, fitted to a 10-inch pump, may be SEEN any day at SCOTT'S WHARF, SOUTH-WARE-BRIDGE, BARNHURST.

In this application of it, there is no doubt; an ordinary amount of friction—represented by 277—is reduced to 28. If these pistons were fitted in the air pump of marine and other condensing engines, the effective power, or economy of fuel, would be materially increased; the larger the engines the more manifest would be the benefit.

MR. JOHN KYMER'S PATENT FURNACE, whereby an ECONOMICAL APPLICATION OF FUEL IS EFFECTED, with RAPID EVAPORATION, and WITHOUT SMOKE.—A furnace, on this construction, is erected, and at work, at Messrs. Taddy and Co.'s, 45, Minster, where it may be seen, by cards, to be had on application to Mr. J. M. Sney, 71, Cornhill, or Mr. H. English, Mining Journal Office, 25, Fleet-street.

TWEEDDALE PATENT DRAIN TILE AND BRICK COMPANY.—Landscape Gardeners, Drainers, &c., and Bricklayers, are informed that the COMPANY'S MACHINES, for the manufacture of Drainage Tiles, of increased length and superior fabric, HAVE, by recent improvements, BEEN ADAPTED TO HAND LABOUR, and, being moved with the greatest facility from place to place, are now applicable to the works of any construction or capacity. The royalty, as reduced, is 1s. per 1000, decreasing on an annual make of a given amount. The company are enabled also confidently to recommend their Patent Brick Machine, as being portable, easily worked, and economical.

Applications to be made to Mr. James Hunt, 10, Whitehall, London.

HOLLOW AND SOLID RAILWAY AXLES.—The PATENT SHAFT & AXLE TREE COMPANY are prepared to supply either HOLLOW or SOLID AXLES, and, although the former have not yet come into use, the experiments they have tried convince them of the superiority of their system, and they are now prepared to supply Hollow Axles, combined with the use of a superior material of iron, will maintain the same superiority of character for their hollow as they have gained for their solid axles, of which latter they have now supplied upwards of 20,000, two only made in the commencement of the year 1840, having been recently reported to them as having failed in use.

Brownlee Iron Works, Wrotham, Staffordshire.

SEYSSSEL ASPHALTE COMPANY (CLARIDGE'S PATENT).—Established March, 1841.—The extensive patronage which this valuable MINERAL production continues to receive from the most eminent ARCHITECTS and ENGINEERS in this country and abroad, distinguishes it from the numerous artificial compositions which its reputation gave rise to, but which having been found very inferior to the original material, most of them have ceased to be used. Its merits being well known, it is only necessary to refer to a few of the public works already executed and now in progress. On the London and Greenwich Railway, and Joint station, London bridge, 23,000 superficial feet; several thousand feet at the Great Western, Birmingham, Midland Counties, South Western, Brighton, Blackwall, and other railways; covering of arched in the South Metropolitan, Highgate, and St. Pancras Stations; the covering of the roof of the Fenchurch Street Station, Liverpool; the pavement in Whitehall; the carriage drives at the House of Commons; and at the entrance to the park by Aqueduct House. The only and other applications of the new process at St. Pancras; several works at the stations on the Dublin and Kingstown Railway; and many other public and private works in different parts of England, Ireland, and Scotland.—A series of prices, with books of specifications, can at all times be had at the company's depot, where specimens of its various applications may be seen.

Brynal Asphaltic Depot, St. Pancras, near Westminster bridge, March, 1841.

IMPORTATION TO INVENTORS AND PATENTEES.—Mr. J. B. HILL, having been engaged as a CIVIL and PRACTICAL ENGINEER, during the last twenty years, in making designs and carrying out highly important works, machinery, &c., for some of the most eminent engineers of the day, has CONSIDERED the PRACTICE OF PATENT AGENTS, in obtaining patents, involving secrets, making designs and specifications, and securing every department of patent business, to be a great disadvantage to inventors and others, the great advantages arising from CONFIDENTIAL CONSULTATION and EMPLOYMENT OF ONE whose knowledge has been acquired from PRACTICAL EXPERIENCE IN THE USEFUL ARTS, instead of consulting the speculative part of their business to those who, from want of mechanical knowledge, have, in many cases, obtained patents which have subsequently proved void in law, from imperfect description, vagueness, or want of originality—also involving a serious loss to the proprietors.—Books and records of all patents investigated, and every kind of information furnished.—Designs and drawings, surveys, reports, calculations, and estimates of all descriptions of works, executed with ability and dispatch.

25, Chancery-lane.

BOLTON AND PRESTON RAILWAY COMPANY.
TENDERS FOR LOANS ON MORTGAGE.—The directors of this company are prepared, under powers of their Acts of Parliament, to RECEIVE TENDERS for the LOAN OF MONEY, in sums of not less than £200, and for terms of three, five, seven, or ten years, and to GRANT MORTGAGES of the said undertaking, and of the rates, tolls, or monies arising therefrom, as securities for such loans, bearing interest at the rate of 3 per cent. per annum. INTEREST WARRANTS, for the whole term for which the loan shall be made, will be delivered to the lenders along with the mortgages, and be made payable half-yearly, at the company's bankers in London, or Bolton, as may be preferred. The tenders are to express the sum and the term of years for which the same are proposed to be lent, and to be addressed to the secretary, at the company's office, Bolton.

By order of the board of directors, PETER SINCLAIR, Secretary.

LONDON AND BIRMINGHAM RAILWAY.—ALTERATION OF TRAINS.—The public are informed that, on and after MONDAY, the 1st of MAY next, the following ALTERATIONS will take place in the TRAINS on this railway:—

The 11.50 a.m. Down Train from London will depart at One o'clock, and a corresponding acceleration will be made in the time of its departure from the intermediate stations.

The 3 p.m. Down Train, which now stops at Aylesbury, will go on to Wolverton. The 11.10 a.m. Up Train from Birmingham will be limited to first class carriages, private carriages, and horse boxes.

For further particulars the public are referred to the Times Office, which may be had on application at the company's offices, at Euston Station, Broad-Street, Green-church-street, Cross Keys, Wood-street, Chesham-street, Swan-with-Two-Necks, Lad-lane, George and Blue Boar, Holborn; Golden Cross, Charing-cross; Spring Eagle, Regent-circus; and Griffin's Green Man and Bull, Oxford-street.

Office, Euston Station, April 12. By order, R. CREED, Secretary.

LONDON AND BIRMINGHAM RAILWAY.—CONTRACT FOR WORKS.—The directors of the London and Birmingham Railway Company will meet at the office, Euston Station, on Friday, the 15th day of MAY next, at Twelve o'clock, to RECEIVE TENDERS for the CONTRACTS for the following WORKS:—

1. To make the Warwick and Leamington Branch Railway, from the Coventry Station of the London and Birmingham Railway to Kenilworth Common.

2. To make the Warwick and Leamington Branch Railway, from Kenilworth Common to the terminus near Leamington.

Draft of the contract, with plans and specifications of the works, will be ready for inspection at the resident engineer's office, Camden town, London, on and after May 1.—Printed forms of tenders may be had at the resident engineer's office, and no other will be attended to.

The tenders must be delivered sealed, addressed to the secretary, and endorsed, "Tender for Works," at the office, Euston Station, on or before Ten o'clock, a.m. of the 12th of May, and parties tendering (or others duly authorised by them) must attend in person at the time of meeting.

The parties whose tenders are accepted will be required to enter into a bond, with two securities, for the due performance of their contracts, in a penalty not less than 10 per cent. on the gross sum contracted for, and the terms of the proposed securities to be specified in the tender.

The directors will not bind themselves to accept the lowest offer. The contractor, if he require it, will be furnished by the company with a counterpart of his contract, at his own expense.

By order, RICHARD CREED, Secretary.

Office, Euston Station, April 12.

SHEFFIELD, ASHTON-UNDER-LYNE, & MANCHESTER RAILWAY.—CONTRACT FOR WORKS.—The directors of this company will meet at their office in Manchester, on Wednesday, the 20th inst., to RECEIVE TENDERS for the execution of the CARLTONS CONTRACT, commencing at the eastern entrance of the Summit Tunnel, at a peg, branded 21 miles 30 chains, and terminating at a peg, branded 74 miles 57 chains from Manchester; the length being 53 miles and 10 chains, or thereabouts, and comprising all the works and materials necessary for making and maintaining this portion of the railway, with all the excavations, embankments, bridges, culverts, drains, fences, and gates complete, including the laying, ballasting, and finishing the permanent way, and finding all labour and materials requisite for the same, except the rails and chairs.

Plans, specifications, conditions, and a draft form of contract, may be seen at the Company's Offices, 15, Piccadilly, Manchester, on and after Monday next, the 10th inst., where printed forms of tender may be obtained.

The tenders to be sent in to the secretary, at or before One o'clock on the above day of letting, and parties tendering, or some one duly authorised, will be required to be in attendance. The parties whose tender is accepted will be required to enter into a bond, with two securities, for the due performance of the contract, in a penalty of not less than 10 per cent. upon the gross sum contracted for. The directors will not consider themselves bound to accept the lowest tender.

By order, J. PLATFORD, Secretary.

Office, 15, Piccadilly, Manchester, on and after Monday next, the 10th inst.

SHEFFIELD, ASHTON-UNDER-LYNE, & MANCHESTER RAILWAY.—CONTRACT FOR WORKS.—The directors of this company will meet at their office in Manchester, on Wednesday, the 20th inst., to RECEIVE TENDERS for the execution of the CARLTONS CONTRACT, commencing at the eastern entrance of the Summit Tunnel, at a peg, branded 21 miles 30 chains, and terminating at a peg, branded 74 miles 57 chains from Manchester; the length being 53 miles and 10 chains, or thereabouts, and comprising all the works and materials necessary for making and maintaining this portion of the railway, with all the excavations, embankments, bridges, culverts, drains, fences, and gates complete, including the laying, ballasting, and finishing the permanent way, and finding all labour and materials requisite for the same, except the rails and chairs.

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By order, J. PLATFORD, Secretary.

Office, 15, Piccadilly, Manchester, on and after Monday next, the 10th inst.

SHEFFIELD, ASHTON-UNDER-LYNE, & MANCHESTER RAILWAY.—TENDERS FOR LOANS.—The directors are prepared to GRANT MORTGAGES, under the powers of their Acts of Parliament, for LOANS OF MONEY, in sums of not less than £100 each, and for periods of three, five, or seven years, at the option of the lender.—Interest, at the rate of 3 per cent. per annum, will be paid half-yearly, for which interest warrants will be given for the period agreed on, payable at the company's bankers in London, Manchester, or Sheffield. Further information may be obtained at the company's offices in Manchester or Sheffield; at the office of Messrs. Forster and Smith, solicitors, Sheffield; Messrs. Bagshaw and Strassman, Manchester; or Messrs. Johnson, Son, and Wetherall, Temple, London.

By order, J. PLATFORD, Secretary.

Manchester, Feb. 15.

MIDLAND COUNTIES RAILWAY.—The directors are READY TO RECEIVE SEVENTEEN THOUSAND POUNDS ON SECURITY of their LOAN NOTES, for three years, at interest at the rate of 4 per cent. per annum, to be paid half-yearly.

By order, J. F. HILL, Secretary.

Leicester, March 14.

LONDON WOOD PAVING COMPANY.—At a General Meeting of the subscribers to the London Wood Paving Company, held at the George and Vulture, Cornhill, the 12th of April inst.,

GEORGE DOWDRELL, Esq., in the chair,

After a full explanation of the prospects of the company, the following resolutions were severally proposed and carried unanimously:—

That this meeting be fully satisfied that Paving's wood paving process, and will maintain a decided preference over all other systems now in use, in respect of the superiority of construction, safety, durability, and comparative cheapness, and that it will afford very considerable profits as a commercial undertaking, and be of material advantage to the public.

That the London Wood Paving Company be authorised to be constituted on the basis of the preliminary prospectus read to this meeting. That no contracts be entered into for an extent not previously anticipated, and that it be desirable to have sufficient funds at command for their immediate execution, the first issue of shares at par, with the privilege of participating in subsequent proceeds, be obtained; and that applications for the additional shares be received up to the 15th of May.

That John Allison, James Barlow, W. J. G. Barlow, John Forster, John Forster, and Edgar Wright, Esq., do form the board of directors, with power to add to their number; that J. Barlow and J. Barlow, Esq., be appointed auditors; that Messrs. Bagshaw, Strassman, and Co., do form the bankers for the company; that J. F. Hill, Esq., be the solicitor for the company; that Mr. Lee do receive the management of all contracts and works; and that the appointment of any other necessary officers or assistants be vested in the directors.

That the directors do exercise and delay such necessary expenses as have been incurred in the formation of the company.

And that the very sincere thanks of the meeting be given to the chairman for the efficient manner and gentlemanly courtesy with which he has presided.

J. LEE SEYMOUR, Notarialis.

London Wood Paving Office, Charlotte-row, Mansion-house, April 15.

THE HYDRAULIC RAILWAY.

It is the province of the editor of a scientific journal to direct the attention of the public to new inventions which promise to develop fresh applications of the arts, and new branches of manufacture. Hence, we have several times noticed in our columns Mr. Shuttleworth's hydraulic railway. It appears to us an invention which is likely, not only to find employment for capital, and labour for large bodies of the industrial classes, but also to throw fresh vigour and power into our railway system, combined with an economy to benefit both the railway proprietors and public at large, to an extent which, we think, has not been yet sufficiently considered.

Our columns are open to any discussion on the merits or nature of hydraulic propulsion; and, on this invention, is now fairly before the public, we should rejoice to find that those parties, who may feel inclined to investigate the principles on which it is founded, adopted that open public course of discussion which will always best elucidate any subject, and bring out the truth. The truth has nothing to fear from public inquiry; and this mode of conducting the argument is best becoming all parties, and completely removes the possibility of reflections respecting motives, as it is the very essence of fair dealing.

It has come to our knowledge that this invention—we are disposed to say, apparently great invention—is, at the present moment, impeded, in some degree, in its onward course, by two or three objections to parts of its detail, which, being suggested in a few instances, and only conversationally, have not yet been submitted to the ordeal of public discussion. We are far from desiring to impede unworthy motives to the parties, who so earnestly afford an opportunity of reply, when justice to the hydraulic system requires it should be made. Whatever mistakes these gentlemen, from misapprehension of the real bearing of the subject, may have fallen into, we can feel no doubt—in fact, we know—that several of them are highly respectable parties. We, therefore, only the more regret that they have not, thus far, adopted the proper method for determining the correctness or incorrectness of a few of their ideas on this novel subject. However, we think we can now afford them a little information; and we shall be happy to do so, on account of our desire to see this, as well as every other clever invention, placed on what appears to be its proper basis. We believe the objections that have been thus suggested are principally the three following. (We shall be happy to be informed if there are others):—

First. It is objected, that, in some localities, the supply of water requisite to work part of the machinery of the hydraulic railway may not be easily obtainable. This introduces the question—What supply of water will be required? To charge a section of propulsive piping of seventy yards in length, and one foot in diameter, nearly 165 cubic feet will be wanted; and, to convey to the mind an idea of the smallness of the bulk of this supply, we will mention that the cube root of 165 is 5.444, which, of course, expresses the cube that would contain this water. But this supply, once provided, is not to be lost—at least, in all localities where it is worth keeping; and this remark, by the way, will also apply to the condensing water for the stationary engines, which would, in all such cases, be run off in the usual manner into a dam, through the divisions of which it would be made to wind its way, to assist it in cooling, after which it would, of course, be again passed through the condenser. As respects the water for the hydraulic propulsion machinery, it would, after having done its work, be run back again to the first power stations, frequently by the drains that are placed under the upper works, or, in the case of every railway, at the time of being constructed. Thus a mere dribbling of water would be required to supply only the loss by evaporation and leakage (if any) in the drainage. It will occur to every one, we think, that this trifling quantity of water may be obtained either from the drainage already existing on the line, from small springs adjoining, or, if there is no small spring near, from one at a distance—the water being conveyed to the power station by an ordinary small leaden pipe. To meet the remotest contingency, we will not refuse to entertain, for a moment, the improbable supposition that no water could be procured from any of these sources. Be it so; but do we not all know there are such things as wells, many of which are capable of furnishing 100 times the supply that would be required? Let the wells be found in many places on railways, and the work they have to do, be considered. On the Great Western, and, perhaps, some others, there are locomotives that evaporate 300 cubic feet of water per hour, if not more. Now, the trains often pass the water tanks, and their engines take in their supply, on several great lines, about every half hour. What, then, is the character of the supply which those wells that feed these tanks have to furnish? It cannot be less than at least 100 cubic feet per hour, and may, in some cases, amount to twice that! The diminutive streamlets which would be required on the hydraulic propulsive system, certainly, would be of much more frequent recurrence than these wells, but what are they, individually or collectively, when compared with these some wells? We will not consider imaginary impediments, when we should be weighing enormous forces—we will not strain at a gnat any longer! Mr. Shuttleworth does not propose to extend his railway system across the sandy deserts of Arabia.

Secondly. The friction of the water in its quick passage up the propulsive pipes, has been considered of serious amount. The real question demanding attention clearly is, the quantum of actual free power which the hydraulic system can develop, after making full allowance for the friction. If the amount of power be much greater than that which any other system can exhibit, and if it be produced at considerably less expense, the above objection is fully answered. And that Mr. Shuttleworth's statements are correct, which undertake to demonstrate that the power of this system will be much greater, as well as cheaper, than that of any other, we can entertain but little doubt; otherwise his published calculations and scientific deductions would have been publicly called in question. It must have been so, considering the large mode of approximation this invention has received in different quarters. Further more, we consider the patentee has scarcely done justice to his system in this respect; and we can only attribute his perfect willingness to allow great deductions for the friction, from his knowledge of the great amount of power he has at his disposal after all his work is done. If friction supply be large piping, in anything like the ratio which is assumed, its retardation will be large, according to scientific theory, in the case of the elastic, as well as the non-elastic fluids; the probable difference being, that, in the former instance, it will be spread over a much larger space, but with less force, while in the latter it will be more condensed. The boiling of the water at the head of the current, in its rush up the pipes, will be brief and quickly carried away, but strong, in non-elastic fluids; while the eddies, or little whirlwinds, in the air, in elastic fluids, will, from the nature of the element, be considerably more extended; and this must apply whether the moving volume be set in motion by exhaustion before, or compression behind. Now, we do not observe that the able inventor of the atmospheric railway anywhere debilitates his system for friction. If these gentlemen consider themselves justified in setting aside such data of science—and, considering their huge practical experience, they may have good grounds for it—we do not see why Mr. Shuttleworth should not do the same. The patentees of the atmospheric railway, no doubt, will feel satisfied on this subject, with the results observed by them on their experimental line at Woomersley Scrubbs. If science has failed in its prognostications in one case, it would be rather singular to assume it would be correct in another. We cannot but repeat our conviction, that Mr. Shuttleworth has made concessions on the subject of friction which were scarcely fair.

Thirdly. It appears to be the opinion of some parties that, costing off from the active driving power, at the end of every section of propulsive pipe, and running the next 100 yards by the acquired momentum alone, has something strange about it; and that it does not seem to accord well with our present accepted notions of the science of motion. This is but common. A railway is a very different thing from a turnpike-road. On a high road the retarding friction is very great; on a railway it is reduced to a minimum; and, when the wind or air is not unfavourable, and the line level, this minimum of friction, and that of the axle of the train, are the only causes of its ever stopping, unless the brakes are put down; hence, a train, under these circumstances, after the power has been cut off, will run, if left to itself, perhaps a couple of miles before stopping. We are all well acquainted with the various accidents which have, at different times, occurred on railways, from the speed as it then was, some time after the propelling power (the steam) has been cut off, and runs with all the brakes down; in fact, merely a small maintaining power, to prevent the speed in a train when once it is acquired, is, commonly, all that is necessary; and the difference between the application of this small force, and its being cut off for a very limited distance, is all that applies to the case in question. To estimate daily this difference, the immense force of the momentum in the train should be compared with the trifling effect, comparatively (and for a few moments only), of this maintaining impulse. Mr. Shuttleworth has carefully examined this subject in his pamphlet, in which his calculations are based on data derived from high speeds in motion. A common ball, thrown from a place of rest, in a line illustration of a great moving train when cut off from its first impelling power; the momentum in the ball causes it, in despite of the laws of gravity, and the retardation of the air, to move on, more, and the momentum, and when it ceases, the momentum impelling it on to reach the end of the line—only will be much diminished.

Mr. Shuttleworth has told himself as strong on this point that, some time, he desired to go into the subject of a slightly modified line. He has, however, recently done this, in the pamphlet (with a small diagram attached) to his letter to R. J. Blackwell, Esq., which appeared in the Mining Journal of the 11th ult.; and, we think the subject is worked out, it presents such an extraordinary amount of economy in the machinery, and so great a reduction in the number of his power stations, that we should wish to direct public attention to that document. We cannot imagine that the simplification of the system can be carried further; and it seems to be remembered that simplicity in machinery is commonly tantamount with power and efficiency; and such we consider it certainly to be in the present instance.

We trust we shall, in due time, see the hydraulic railway develop a new

feature in our railway system which would astonish the public as much, at the present moment, as did the opening of the Liverpool and Manchester, with the effects it exhibited, in 1825. We mean, we hope to see the great power of hydraulic propulsion applied to overcome inclines, so steep that they might be correctly termed hills. In fact, when this system has been successfully proved to be of great power for ordinary railway work, its application to lengthened inclines, to pass obliquely round the hills, and to carry our railways through the most mountainous districts, naturally appears to be the next step. Then the release of the tunnel will no more stop the formation of new lines, for they will be no longer contemplated.

We do not recollect any new invention the principles of which have been less a matter of controversy than of this. Indeed, speaking in a scientific sense, we are not aware that sound has been advanced before the well-informed public (who are capable of testing its accuracy), purporting to question the principles on which this invention is founded. A few vague, unsupported assertions, in one solitary instance only, have been hazarded, and these have been so totally apart, both from the facts and data of science, and the observed laws of Nature, as regards the action of fluids, as to have been found unworthy of the notice of the learned world. This we attribute to the great care and labour of the patentee to render his invention perfect, as near as possible, before soliciting public notice to it, and to his evident desire to advance and claim nothing for the hydraulic railway which should not be in accordance with admitted scientific data, and sanctioned by the first authorities. Considering the present great abundance of capital, we expect ere long to see this invention placed in a position to have its merits fully tested, and its powers rendered conducive to public convenience, while we trust the results may prove equally advantageous to private enterprise.

PROCEEDINGS OF SCIENTIFIC BODIES.

GEOLOGICAL SOCIETY OF LONDON.

APRIL 9.—THE PRESIDENT (Mr. Warburton) in the chair.—Mr. McCrison announced a magnificent donation to the society from Lord Francis Egerton, consisting of the original drawings of the great work of Professor Agassiz, *On Fossil Fishes*, purchased by his lordship for 500*l.* in order to enable the author to publish his researches. The following papers were read:—

1. "On the Structure of the District on either side of the North Downs of Surrey," by R. A. Austen, Sec. G.S.
2. "Notice of the occurrence of Beds containing Fresh-Water Fossils in the Oolitic Coal-Field of Brora, Sutherlandshire," by Mr. A. Robertson.—During a short excursion to the oolitic district of Sutherlandshire, in the course of last summer, Mr. Robertson discovered, among the reefs of shale and coal opposite the old salt-pans at Brora, two beds abounding in Cycloid and other fresh-water fossils, which have hitherto escaped notice, and are approachable only at low water. They lie beneath the beds of calcareous sandstone, considered by Mr. Phillips to represent the gray limestone of Clonmore, and other localities in Yorkshire. The uppermost is shale, with fossils, about an inch in thickness; it contains remains of fishes of the genera *Lepidosteus* and *Megalodon*, molluscs of the genera *Paludina* and *Cyclos*, and crustacea of the genus *Cypris*. The lower bed of clay, with fossils, about thirteen inches thick, and contains fish remains of the genera *Lepidosteus*, *Acerodus*, and *Hybodus*; molluscs of the genera *Paludina*, *Perca*, *Unio*, and *Cyclos*; the same species of *Cypris* as in the upper bed, and minute fragments of carbonized wood. Nearly the whole mass of both beds consists of fossils. No marine fossils, with the exception, perhaps, of the scales of *Lepidosteus*, are found in the upper bed, and Mr. Robertson regards it as a fresh water deposit; whilst the mixed nature of the fossils of the lower one conclusively point out its estuary nature.

3. "Observations on the Occurrence of Fresh-Water Beds in the Oolitic Deposits of Brora, Sutherlandshire, and on the British Equivalents of the Neocomian System of French Geologists," by Mr. Murchison.—After showing that the beds described by Mr. Robertson in the previous paper, are included in the heart of the oolitic series, being found in reefs of rock, which, unquestionably, lie beneath the Oxford clay, and are not far above the roof of the Brora coal, the author proceeds to inquire into the relations of the shells described, with those formerly discovered by Professor Sedgwick and himself in the Hebrides, at Loch Staffa, in Skye, formerly referred to the wealden. The identity of the characteristic species in both beds induces Mr. Murchison to consider the Skye deposit as interstratified with the middle oolite; and, for similar reasons, he is disposed to refer the Eglis beds, discovered by Mr. Malmgren, to the oolite series. From the identity of the fresh-water shells in their oolitic deposits with the species found in the wealden, combined with the evidence afforded by other wealden and oolitic fossils, the author is led to conclude that the wealden is more naturally connected with the oolite, or Jurassic, than with the cretaceous system; and also that the Neocomian formation of foreign geologists ought not to be placed in the same parallel. He examines the relations of the Neocomian to English strata, and maintains that it is little more than an equivalent of the lower green sand of British geologists, in which view he is borne out by the researches of Count Keyserling, in the Neocomian of the Caucasus. In confirmation of his opinions, he adduces evidence from the researches of Dr. Mantell on the wealden, of Prof. Owen on fossil reptiles, and of Prof. Agassiz on fossil fishes. The evidence of the geologist and zoologist combine in establishing that the wealden fossils are, upon the whole, the terrestrial and fluviatile remains of the great oolite period. Eventually, we may find that, while the larger portion of the wealden must be classed with the oolite series, its uppermost part is of the same age as the lowest Neocomian strata, and thus we may connect that portion of it with the cretaceous system.

INSTITUTION OF CIVIL ENGINEERS.

APRIL 11.—JOSHUA FIELD, V.P. in the chair.—The meeting was commenced, by reading an appendix to Mr. Mackinnon's account of the Glasgow water works, which was read at the last meeting. It described the construction of a reservoir for supplying the new portion of the city, situated nearly four miles from the works, at a height of nearly 100 feet above the Clyde; in order to take the utmost advantage of a limited space, the sides of the reservoir were made of cast-iron plates, connected with a floor composed of Arbroath pavement, fastened together with iron cramps, and the joints pointed with cement; it is supported upon consecutive layers of sand, clay, and rubble; the interior dimensions are 133 ft. long, 55 ft. 6 in. wide, and 11 ft. deep, and the whole is covered by three wrought-iron roofs, each of 38 ft. 6 in. span.

A drawing was exhibited of the Great Cornelian Tank erected in the Island of Malta in the years 1841 and 1842, by Mr. W. L. Armstrong, A.I.C.E., superintendent of Government works. It is the largest modern covered tank in Europe, as it will contain 15,000 tons of water; it is destined to form part of the projected water works for supplying Malta with good water, a description of which was promised.

A letter was read from the late Sir John Robinson, giving a short account of the Arctonion well at Gossale; after detailing the various diameters attendant upon the work before the water was reached, at a depth of 174 ft. 6 in. English, and at a cost of upwards of 12,000*l.* sterling, the letter proceeded to give Sir John's objections to the idea of the countermines suffered by the copper tube being due to the hydrostatic pressure; he attributed it to the violent manner in which it had been forced down the bored hole, and even more so in withdrawing it.

A description was read by Mr. Baker, Grad. Inst. C.E., of the water-pressure engine constructed by Messrs. Broadall, at Freyberg. This engine is placed in the Alto-Mordyke Mine, at a depth of 300 feet beneath the mouth of the pit; the power employed is a column of water, which, acting alternately upon the pistons of two cylinders, each eighteen inches in diameter, with 9 foot stroke, gives motion to forty-four pumps, in two sets of twenty-two each, placed at an angle of 45 deg. with the horizon; the suction pipes of the highest pumps descend for thirty feet, dipping into the delivery cisterns of those immediately below them, and this is repeated downwards for the whole series, thus raising the water from the bottom of the mine to the point where it runs off as an art. The engine requires little attention or repair, and it is stated that the duty performed is as 70 to 100.

Some specimens were presented of screws cut in lathe constructed by Messrs. Shanks and Co. (Johnston, near Paisley); they were sent by the late Sir John Robinson, who described the principal advantages of the arrangement of the lathe to construct the cutters acting during the insertion, as well as the construction of the screw, and, when cutting long screws, their being alternately stayed in the side opposite to the tool which was in action, that good work could be produced with such dispatch as to reduce the cost of turned and screwed bolts as low as that of similar articles produced by screwing machines, which worked by dies with compression. The specimens were drawn cut, and were superior to the ordinary quality of screws. It was remarked that, although the machine was ingenious, it was not new, a somewhat similar lathe having been in use at Messrs. Maudslays and Field's for many years, and that the screwing dies invented by Mr. Whitworth cut out the threads of screws as cleanly as those done by a chasing tool, and entirely without compression.

The papers announced to be read at the meeting on Tuesday, April 22nd, were:—An Account of the British making at Broomfield Tunnel during the Winter of 1840 and Summer of 1841, by F. W. Staines, Esq., Inst. C.E.;—Description of a Cast-Iron Bridge, completed in the year 1839, for carrying the Birmingham and Gloucester Railway over the River Avon, near Tewkesbury, by Captain Moseley, Assoc. Inst. C.E.

METEOROLOGICAL SOCIETY OF GREAT BRITAIN.

APRIL 11.—GEORGE LEAKE, Esq., F.R.S. (now president), in the chair.—The minutes of the last meeting having been read and confirmed, W. Whittall, Esq. (of Chester), William Knapton, Esq. (Wiltshire), James Hyde Park, and the Rev. John Lubbock, B.D. (Master of South Westminster, Northwick), were duly elected members. The following papers were then read:—

1. "On the improvement in registering wind phenomena, and more especially relating to a new self-registering anemometer."—2. A paper on an hourly self-registering rain gauge.—3. A paper on an hourly self-registering anemometer, by P. M'Farlane, Esq., of Chester.—4. A paper on the appearance of the comet in March, from J. M. Mearns, Esq., Gosport.—5. A paper on the same subject, by Lieut. Mearns, R.N., endeavouring to prove that this is its eighth appearance, having successively been seen at twenty-five and a half years interval.—The subject of the meteorological day was then discussed, and opinions collected on the three following queries:—Whether meteorological day had better adopt the civil day, the astronomical day, or a day dated from sunrise, and terminating at sunset, and it was resolved that, to afford every consideration possible to this important subject, an invitation should be inserted in the next Number of the *Quarterly Journal of Meteorology*, soliciting opinions on the subject, and letters addressed to the Editor, No. 30, Foyle-place, will meet with every attention.

PRACTICAL AND SCIENTIFIC ASSOCIATION FOR STREET IMPROVEMENTS.

The first annual report of this useful and highly meritorious institution has just issued from the press, and is of a very encouraging character; an intense interest has been awakened throughout the kingdom towards the amelioration of the public roads, as well as the admitted necessity of the application of scientific principles in their construction, so as to ensure their being better made, and kept in better and cheaper repair, accompanied with an efficient system of drainage and cleansing. No expense or trouble has been spared to acquire a knowledge of any useful facts connected with the formation of carriage-ways, particularly with regard to road pavement; its power to resist the effects of decay, and to contend against the wear and tear of daily traffic, on which points much valuable information has been obtained, and many new and interesting principles have been laid before the public. Assurance have been received from many of the foreign ministers and consuls, in London, to afford every facility for obtaining a knowledge of the formation of the roads in foreign countries; and a museum, which has been established at 20, Vere-street, contains specimens of every description of pavement, various improved horse shoes, plans for preventing slipping on wood, and numerous other articles connected with street improvement. One of the most important parts of this report relates to the

NEW STREET-SWEEPING MACHINE.

invented by Mr. Whitworth, of the firm of Messrs. Whitworth and Co., of Manchester, in which town it has now been in use upwards of twelve months—a part of the township having been assigned by the commissioners for the trial of the machine. The district included several principal thoroughfares, containing 30,000 square feet of street surface; by the contract, it was to be cleaned three times oftener than under the old system, for three-fourths of the cost, or at one fourth the former rate. This district soon presented a striking contrast with the other parts of the town; and, before the contract had expired, a memorial for its renewal and extension, signed by more than a hundred of the principal inhabitants, was presented to the commissioners; the contract was accordingly renewed for twelve months, and the district extended to include 90,000 square yards. This machine consists of a series of brooms, made of the fibre of an American plant (*possum*), suspended from a light frame of wrought-iron, hung behind a common cart, the body of which is placed near the ground for greater facility in loading. As the cart-wheels revolve, the brooms successively sweep the surface of the ground, and carry the soil up an incline or carrier gutter, at the top of which it falls into the body of the cart. In appearance it is like a watering cart, with wheels of iron, having cups attached, clamped securely inside the wooden ones to the spokes; this gives motion to a spindle, over which passes an endless chain, reaching to the ground, and carrying the succession of flat brooms, of the width of the trough up which the dirt is conducted. When the cart or box is filled, by a very simple contrivance it is dropped, and taken away by a skitter cart, a fresh box being attached to the machine. The success of the operation is no less remarkable than its novelty; proceeding at a moderate speed through the public streets, the cart leaves behind it a well-swept tract, which forms a striking contrast with the adjacent ground. Though of the full size of a common cart, it has repeatedly filled itself in less than six minutes; and, in very wet weather, in three minutes and a half.

We were present at the office on Monday, the 10th instant, when Mr. Whitworth attended, and explained the action of the machine. Several surveyors, and gentlemen connected with the metropolitan paving boards, also attended, and took much interest in the description. A well made model, about two feet six inches in length, was described by Mr. Whitworth, and satisfied all present of the perfect capability of the invention to the purposes intended. Two machines were afterwards started from Vere-street, through Henrietta street, up Marylebone-lane, Wigmore street, across Cavendish-square, into Oxford street, thus taking three descriptions of pavement—macadamised, rough-pitched, and wood—all of which it cleansed (to the width of its track—about three feet) in a most extraordinary manner, and with the greatest facility. The streets had been well watered in some parts, and doubts were expressed by a surveyor present as to its power to cleanse out the pools of water and mud formed in the hollows of the macadamised road. The doubt, however, was soon set at rest; the machine, as it passed over them, like a huge animal licking its food, left them as clean as the flat surface, though some were from one to two inches in depth.

Mr. Whitworth is now ready to contract with parties having the control of the roads in all parts of the kingdom; and while a great cause of malaria will thus be quickly removed, and the health and cleanliness of our towns vastly improved, the rates for cleansing, which now average from 3*s.* 6*d.* to 5*s.* per 1000 yards, will, by this machine, be reduced to less than one shilling on pavement of wood or stone, and rather more on broken stone roads. The Improved Street Paving Practical and Scientific Association, whose committee list contains the names of several highly scientific gentlemen, is likely to be productive of much useful information and established data for the regulation of public ways, as regards paving, lighting, watering, cleansing, &c.; and while, from the numerous patents, so many interests are clashing, will form a nucleus from which will emanate only those plans which, from the test of experience and severe examination, are likely to prove beneficial to the public. We strongly recommend the association to the consideration of all public men, particularly surveyors, and gentlemen having connection with paving boards, &c., who will obtain every information at the office, 20, Vere-street, Cavendish-square, from Mr. Gutch, the secretary.

LONDON WOOD PAVING COMPANY.

A public meeting of gentlemen who are advocates of Mr. Perring's system of wood paving took place at the George and Vulture Tavern, Cornhill, on Thursday, the 13th inst., for the purpose of taking measures to form a company to carry that plan into operation.—The meeting was rather numerously attended, and the chair was taken by GEORGE DOWDNEY, Esq., who said that, amongst the advocates of the system, he had the pleasure to mention the Court of Common Council, which had taken a warm interest in the subject of wood paving, and had come to a resolution, that it was the cheapest and best method for safety, and would also contribute to the comfort and health of the inhabitants of the metropolis.

Mr. LEE STEVENSON then entered into a lengthened explanation of Mr. Perring's system, previous to which he observed, that he would rather have been subjected to a course of examination from the gentlemen present on the subject. He said that Perring's system made up every deficiency in the Court de L'Etat—first, by forming a secure foot-hold for horses and other animals, and was applicable to the steepest streets in London; secondly, by breaking or bending the joints at the surface, so that the harder or softer portions of the blocks do not run in continuous lines, but intersect each other throughout, besides which, where one surface is partially worn, the other may be used, so as to effect a great reduction in the cost of repairs; thirdly, by opposing, in blocks of a similar size, at least 30 per cent. more of solid material to the wear and tear of traffic, and, in a block of six inches deep, affords two inches and a half of solid material between the connecting joints and upper and lower surfaces, the other allowing only one inch and a half. In addition to this, proper allowance was made for a subsidence of concrete, so that about 1*s.* a yard might be saved by Perring's wood paving. In concluding, he would call on Mr. Alexander Gordon to give an opinion of the practical merits of the system.—Mr. GORDON fully concurred in the superiority of the plan, from the facilities it offered to horses in traction, and the prevention of ruts.

Mr. BARNARD then proposed a resolution, to the effect of the system being more economical and convenient than any other system, which was seconded by Mr. WOODMATE, and passed unanimously.—Mr. FULFORD moved "that a company, to be called the 'London Wood Paving Company,' be hereby declared upon the basis of the prospectus read to the meeting," which was seconded by Mr. BARNARD, and passed *non. con.*—Resolutions for raising a capital of 100,000*l.* in 10,000 shares, of 10*l.* each, with a deposit of 2*l.* per share, and appointing directors, were also passed unanimously.

Mr. BARNARD, having explained the contents of Mr. J. Lee Stevenson's proposed new prospectus for superintending the company's contracts and works, when Messrs. Rogers, Odling, and Co., were elected the bankers, and Mr. Locke the solicitor to the company.—A vote of thanks was then passed to the chairmen, and the meeting adjourned.

HEAT AND LIGHT.—The Experiment of Brunsell announces that the discovery of the B-light radiance has made a discovery, and proved it by trial on the authors. One, whereby the consumption of fuel may be reduced by 50 per cent. It is said to consist in improvements of the form of the engine, and in the steam-pipe. The *Pratt* announces that a trial of a mode of lighting by means of the new volatile gas is about to be made on the Brompton. It is said that the light is ten times more brilliant than that of gas.

THE MINERS' COMPANY.

REAL DEL MONTE MINING COMPANY.

TINCROFT MINING COMPANY.

WISDOM CAPTAIN'S REPORT.

THE MINING INTEREST—QUICKSILVER MONOPOLY.

ON CHLORINE IN METEORIC IRON.

[illegible]

captain); and this may be said to apply to other mines in this particular district. We trust that, with profitable returns, confidence will again be fully restored; for there is ample field for enterprise in our own country, where an ordinary degree of caution is observed; and we are glad to find that the spirit of enterprise is already awakened, as evidenced by the increased orders for machinery, and the extension of the workings in depths. The mining interest, which has had so many difficulties to contend with, has, we hope, seen the worst; and that, with a slight advance in the standard, and continued discoveries, we may yet expect to see the price of labour restored, so as to give, not only to the adventurer a return for the capital employed, but to the working miner a fair remuneration.

In our Journal of 25th February last, we gave a condensed abstract of the specification of the patent of Dr. PATERNE, which is about being brought into use by W. R. VIGERS, Esq., the specification of which occupies ten skins of parchment, occasioned by those technicalities which the patent laws render necessary. It is, however, sufficient to state that the object of the invention is to keep the air in confined places, in a pure and respirable state, without a constant supply of fresh air from the atmosphere. There can be no doubt of the applicability of this principle to hospitals, prisons, convict-ships, theatres, and crowded places, and, we might add, even to the sick chamber, where the health of the patient does not admit of the introduction of a current of air; but our present purpose, and that, indeed, to which we direct our express attention, is to examine how far it may be applied to mining purposes, with economy and advantage, in doing which a few words as to the principle of the patent, may not be amiss. The first thing claimed and specified, is the depriving the atmosphere, in confined places, of the carbonic acid gas which it contains, produced from respiration, or combustion, by means of quicklime and caustic alkali, or of the lime alone dissolved in eight times its weight in water; this vitiated air is passed through this caustic solution by means of a machine, which a boy can easily turn, and its carbonic acid is thereby absorbed, and held by the lime. The requisite quantity of oxygen to supply that consumed, is conveyed by means of a tube from a small gasometer, in which it has been previously generated from chloride of potash, or driven off from the peroxide of manganese by heat. The vessel containing the oxygen may be conveyed near to the machine for absorbing the carbonic acid gas, or may be left at any distance from it, a small tube being the means of communication.

It is calculated that one cubic foot of atmospheric air must be purified for each person per minute, and there is also a defined quantity required to supply that consumed by the combustion of the air from the lighted candles, of course, equal to the number of candles employed. The specification contains a further applicability of the invention to the purposes required, by a diving-bell, which was fully tested by Dr. PATERNE and his assistant, by a recent exhibition at the Royal Polytechnic Institution, in Regent-street. Our readers are fully aware that in driving an adit, or level, it becomes necessary to sink frequent shafts to admit air, and in driving an end to any distance, with the object of cutting a lode, how frequently they are obliged to desist from their operations until a winze is sunk, or by some other mode, air can be admitted to the miner. The machine which is the subject of the patent announced in our advertising columns may be rendered at a cost in manufacture not exceeding 50*l.*, varying, of course, as to its size. It is assumed that it will not be required of more than three feet diameter, thereby affording an easy admission through any shaft or level, and may thus be advantageously used in driving levels, and in winzes, or rises, by which many thousand pounds may be saved in ascertaining the existence, or non-existence, of lodes, and other important objects, at a slight expense, instead of the heavy outlay to which adventurers are now subjected. The ingredients required for absorbing the carbonic acid gas, and producing oxygen, are of the most common and abundant description, and the labour required, is, in itself, perfectly insignificant, not amounting to beyond a few shillings per day.

We have made inquiries as to the charge made for the use of the patent, but understand such is, in some measure, undetermined. Indeed, the various modes and purposes of application render it a matter dependent on circumstances. We hope, on an early occasion, to be in possession of more minute data, which we shall gladly lay before our readers.

The fearful accident recorded in our columns of to-day, whereby no less than twenty-seven lives were lost, requires more than ordinary notice—the evidence afforded at the coroner's inquest being of a nature which would lead us to suppose that some measure will emanate from Government, whereby protection may be secured to the collier—a course which appears to us to be indispensably necessary, where life is sacrificed to cupidity, and a false economy; as well as a disregard displayed of all feelings of humanity. It will be gathered from the brief report which we have given of the explosion, that the dangerous state of the workings was not only known to the viewers and agents, but that one of the colliers had actually "left an hour before the accident, because he saw his life was in danger," and for which prudent resolve the under viewer (one of the sufferers) threatened to "spile" him, or stop 2*s.* 6*d.* from his earnings. From the evidence of all the pitmen, it appeared "that the pit was very foul in many places, and the ventilation not properly attended to," while, from that of others, it further appeared, that the lamps, as well as the traps, were out of repair, and almost useless. With such evidence before the jury, it is surprising how they should have returned a verdict of "Accidental Death," when it is clear that the loss of life arose from the culpable neglect of the viewers or agents of the colliery, on the score of expense. Thus have twenty-seven lives been lost, and the families deprived, not only of husbands and parents, but in many (possibly in the generality of) instances, of the only means of support. Such culpability, we should hope, will not be allowed to pass unnoticed; and that while Lord ASHLEY evinces so much interest for children employed in mines and collieries, he will display the like feeling under the present deplorable circumstances, by calling for an inquiry more rigid than that reported in our columns of to-day, where children—who, by his act, would be precluded from earning a subsistence by labour—are deprived of their means of support, by the cupidity or unpardonable neglect of proprietors and their agents. Had an accident of a like nature occurred on a railway, and the evidence adduced was to the effect that it arose from the culpable neglect of the superintendent or engineer of the line—that the carriages were insecure, and that, after attention being directed to them, they had been neglected, we venture to say, not only would a heavy demand be levied, and very properly so, but that a verdict of manslaughter would have been delivered against those who were thus proved to be neglectful of their duty, as well as wanting in the common feelings of humanity.

As we purpose bringing the subject under the consideration of the House of Commons, by petition, for an inquiry to be instituted, with the view of some legislative measure being enacted, so far as is practicable, to preclude a similar accident occurring, we shall feel indebted to our correspondents for any additional information, so that the same may be embodied in the petition, and laid before the House. On such occasions, we trust that every representative of colliery districts, as well as coal proprietors who have seats in the House, will take an active part in the discussion which must necessarily attend the presentation of the petition, or a motion consequent on it, for the appointment of a select committee. Mr. FRANK will,

doubtless, take up the question, while the unanimous concurrence of the House may be confidently expected, when subjects of so much infinite less importance engage the time and attention of the legislative body. We hope to be in a position next week to announce that the question has been taken up by parties of influence in the House, if not by Government itself.

It is gratifying to find that, by the late contract entered into by the Spanish government for working the quicksilver mines of Almaden, however the advance in price may militate against the mining interest, yet that the holders of Spanish Bonds (3 per cents.) will, in a great measure, be secured the payment of interest accruing thereon, a decree having been executed by the Duc de la VERTORIA, by which the entire produce of the mines of Almaden and Almadenejos, after deducting the expenses of working from the commencement of the contract (23rd ult.)—besides 20,000,000 reals on the banks of Cuba, and 4,000,000 on the Cruzada branch—is to be exclusively applied to the payment of the dividends on that stock, the heads of the Sinking Fund Department being held responsible for the application of the funds in question to this, and no other, object. It is to be hoped this earnest of the good intentions of the Spanish government will be followed by other acts whereby they may regain the confidence of the capitalist; and, in some measure, repair the injury they have inflicted, from want of honesty and good faith.

We find, from the parliamentary proceedings, that a petition was presented, on Tuesday last, against the passing of the amended Southampton Docks bill, which was referred to the committee.

We are not surprised that this course should have been pursued when we consider the object of the proposed amended act, which is to convert the shares in the original capital authorised to be raised by the Act, for making a dock or docks at Southampton, into stock; to raise a further sum of money, which is set down at 350,000*l.*, being equal to the original capital of the company; and, if necessary, to take up an additional sum of 150,000*l.*, on such terms as the directors may think fit.

It is unnecessary to recapitulate the main features of the undertaking, or the objections which have been already mooted in our columns. It is therefore sufficient to observe that nearly 300,000*l.* has been expended already on the outer dock, and that the proposed Act contemplates a further outlay of 500,000*l.* in the completion of the tidal dock, erection of buildings, &c. We again recommend the proprietors to be watchful of their own interests, and not to place confidence in those who have already deceived and betrayed them.

PRESENT APPEARANCES AND PROSPECTS OF THE SHARE MARKET.—We have just been favoured with the usual periodical circular of Messrs. R. B. Watson and Co., of Leeds, taking a review of the past few months, and directing attention to the probable future results of the present extraordinary position of capitalists. The first thing noticed is the excessive abundance of money—in fact, the unhealthy superfluity of it in the mercantile world, while interest can only be obtained from bankers to the extent of 3 per cent., the money holders will run to stocks, railroads, &c., both foreign and domestic. This superabundance of money must find resort to some employment, either legitimate or otherwise, and, even should trade improve, nothing like the amount of capital will be required as was a few years since; less business is done in the large way, owing to the improved mode of transit, in consequence of which smaller stocks are kept, and smaller purchases made, though made oftener. In consequence of the great reduction of the working expenses on almost all lines of railways, the companies will be enabled to pay off their mortgages sooner than estimated, and this will throw back large amounts of money into inactivity, and greatly reduce the value of capital, and will, no doubt, enable many companies largely in debt to reduce the rate of interest to a great extent. In almost all the railway reports for the past half-year, the deplorable state of the commerce of the country was clearly shown, in the general great reduction in the receipts of the goods' department, as well as passenger traffic; in some an absolute reduction in first-class passengers; in others an increase in second and third-class, and a diminished number of first class; and, in all, an immense falling off in the total receipts, as compared with former years.

FRENCH RAILWAYS.—The railroad bills before the committee of the Chamber of Deputies form the principal topics discussed or referred to in the Paris Journals and private letters last received. One correspondent states, that "the opposition to the railroad treaties just contracted (the one for establishing a railroad between Paris and the northern frontier, with a branch to Calais; the other for constructing a railroad between Avignon and Marseille) will, in all probability, be successful."—Thus (continues the correspondent) the tardy and timid measures entertained and contemplated by the French Government with a view to preserve to France the portions of her commerce threatened with annihilation by the spirit and enterprise of surrounding countries will be defeated by faction." It was rumoured, but no doubt incorrectly, that the King was opposed to all railroad schemes that would facilitate intercourse between the departments and the capital. That which seems certain is, that no new railroad will be sanctioned by the Chambers for yet another year! "Referring to a great measure on this subject (says the correspondent), M. de Larochefoucauld has presented to the Chamber of Deputies a proposition to incorporate members, interested in any public undertaking submitted by the Government to the legislative sanction, from taking part in the vote of the bill."

RUSSIAN RAILROADS.—It appears, from a statement made at St. Petersburg by Count Benckendorf to a general meeting of the shareholders of the Zarskoe Zelo Railroad, that the number of passengers conveyed by it during the last year was 472,794, that the total receipts amounted to 238,130 silver rubles (nearly a million of francs) and the expenses to 106,669 rubles—leaving a profit of 131,468*l.* In 1841 the number of passengers was 428,592, the receipts amounted to 238,979 rubles, the expenses to 121,091 rubles, and the net profit to 418,079 rubles. From this account it is seen that the number of passengers in 1842 exceeded that of 1841 by 6772, and the receipts of the last year were greater than those of the preceding year by 2167 rubles, although, in 1841 there were 7000 rubles paid for the conveyance of the crown provisions, an item which does not appear in the account for 1842. In this last year, the net profit exceeded that of its predecessor by 17,380 rubles, while the expenditure did not amount to more than 45 per cent. upon the gross receipts, an instance of success equalled by very few railroads out of Russia.

BANK OF IRELAND.—At a general court of proprietors, at the Bank of Ireland, for the purpose of electing a governor and deputy governor for the ensuing year, Richard Carr, Esq., and Thomas Croftwaite, Esq., who served the office of governor and deputy-governor, respectively, during the past year, were re-elected, and the following gentlemen as directors for the ensuing year:—G. F. Browne, J. Barlow, J. Harton, J. Chambers, W. C. Colville, G. Carr, I. M. D'Oliver, N. Hone, H. B. Hamilton, J. Jameson, T. L. Kelly, W. P. Lowry, R. Law, H. Roe, and T. Wilson, Esqs.

DUBLIN COMMERCIAL BUILDINGS COMPANY.—The following gentlemen have been elected directors of this company for the ensuing year:—B. Bollen, P. Brophy, L. Croftwaite, F. A. Codd, J. Croker, J. Ewles, C. Halliday, T. L. Kelly, J. M'Donnell, G. M'Brice, T. Mowery, T. Plow, J. Pender, G. Roe, and T. Wilson, Esqs.

IRISH WATER LAND IMPROVEMENT SOCIETY.—We learn, by the *Lancet* Chronicle, that the directors have made great progress in the reclamation of lands on the estates of Sir John Burke, Bart., Marble-hill, N. Lymock, Esq., Burren, and Mr. Tash.

LAW OF PATENTS.—An action ("Hesley and another v. Rodgers") was tried in the *Nisi Prius* court, Gloucester, on Friday, the 7th instant, for the infringement of a patent for the manufacture of improved trousers straps. Mr. R. V. Richards stated the case for the plaintiffs, and explained the patent, which was the using a strip of leather on each side the leg of the trousers, and securing them by a loose band with an open groove in the centre, so that no need could accommodate between it and the leg. After some years of extensive sale, the defendants had infringed upon their plan, only substituting leather for horse. Mr. Watkyn, for the defendants, did not wish to extend the length of the case; he acknowledged the infringement, and a verdict was taken by consent for 4*l.*, costs 4*l.*

THE IRON TRADE.—The Swedish Government have suspended the export duties on iron until further orders. The Swedish iron will thus be brought into competition with ours at a lower rate in foreign markets. The effect of the improved railway and canal communications of Germany, will also have the effect of bringing the iron of Silesia and other Austrian provinces into the northern markets of Europe.

IRON MANUFACTURE FOR AN AFRICAN KING.—This singular order is now fast approaching completion, and, we understand, will remain open for inspection but a very limited time, the merchants being anxious to have it sketched, if possible, this month. *Liverpool press.*

WATER.—As a proof of the depth of the water, and power of their action, at Madras, it is stated by the *J. Robinson*, that during a violent storm, a quantity of pigs of lead had been cast ashore near the fort, and it was proved that they had come from a vessel which had been wrecked at more than a mile from the shore.

ORIGINAL CORRESPONDENCE.

SUCCESSFUL APPLICATION OF ANTHRACITE.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—If you can afford the space, I would prefer this mode of communicating to Mr. Kymer my sentiments upon a subject which must deeply interest him, as well as all parties connected with this district—viz., the successful application of anthracite as fuel for steam purposes generally, rather than discuss the question of price in a private correspondence. I feel assured we are both aiming at the same result, although our opinions differ as to the best means of attaining it, as in most other matters of opinion, *tot homines, tot sententiae*. I neither wish to disguise the truth, nor mislead the public, but rather to set Mr. Kymer and the public right, he having, in my opinion, taken up an erroneous position, and in that attempting to convey to the public, or rather that portion of the public who are consumers of, and dealers in, coal, impressions injurious to the success of his patent, and to the extensive use of anthracite as fuel for steam-engines. There cannot be a doubt but that Mr. Kymer has effected an extraordinary economy of fuel, but he seems to consider he has a right to put all such saving into his own pocket—that all he can save in quantity he ought to add to the price of his coal, stoutly maintaining that he cannot sell his coal to a profit at less than such price, and, at the same time, that he can work his coal at less cost than any other concern up this line. What is the consequence?—The great consumers say there is no inducement to go to the expense and inconvenience of making an alteration without any pecuniary advantage, and with the prospect of not being able to procure an adequate supply of the coal, since there must be either a very limited quantity of it, or that it must be very difficult to work. Upon these points I wish to set the public right. There is an abundant supply of the coal, and no reason why it should not be shipped at as low a price as coal in the north of England. The voyage from Wales to London being more circuitous, requiring different winds, will generally occupy more time, so that higher freights must be paid; I will assume it at 2*s.* per ton. The charges in London are the same upon all coals; there is no reason, therefore, why Welsh anthracite, of a quality suitable for steam purposes, should not be sold in London at a price 2*s.* per ton above the price of good steam coals from the north of England, such as one of the Hartley's. Mr. Kymer must begin upon this principle. He will then be enabled to show to the consumer such an advantage in pounds, shillings, and pence, as will induce him to adopt the patent furnace; and, once in use, should the saving prove what is represented (of which I entertain little doubt), then the price of anthracite must gradually advance in that proportion, or the other coal must fall, so as to come to a level. But, by the course Mr. Kymer is now pursuing, although all parties who have seen the furnace admire the arrangement, and are struck with the effect, yet none can be induced to adopt it. It appears to me that Mr. Kymer himself is the person disguising the truth, and misleading the public, rather than

CORN AMMAN, April 12.

A SHIPPER OF COAL.

[We do not exactly comprehend our correspondent, for, although it is very natural that Mr. Kymer should be anxious to vend his own coal, we presume it is not a *sine qua non*, on granting licences under the patent, that his fuel should alone be used—as such would be preposterous. Mr. Kymer informs us that anthracite can be delivered in London at 20*s.* per ton; if for less, it is to the manifest advantage of the consumer; and, without economy results from the application of the patent, the latter becomes valueless, both to the patentee and the public.]

MESSRS. KYMER AND LEIGHTON'S PATENT FURNACE.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—I have lately seen in your useful Journal, of which I am a constant reader, several notices of a patent furnace for burning anthracite, brought forward by Mr. Kymer, with whose name I am associated that of Mr. Leighton. Through the medium of the Journal, I wish to ask the latter gentleman, if this plan is the same as that offered some three years since to the committee of the South Wales Anthracite Association, which I suspect to be the case, from a letter which appeared in last week's Number, and from the circumstances detailed in a small pamphlet sent to me about a year and a half ago. It would be but fair to the association if the committee rendered some account of their stewardship.

Liverpool, April 12.

A SUBSCRIBER TO THE FUND.

THE SMOKE QUESTION.—MR. WILLIAMS AND MR. HALL.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—Having read an article in the *Mining Journal* of this day, signed "A Manufacturer," I have no hesitation in pronouncing the statements to be without the least foundation, and, in stating my conviction that it came from the same writer as the article which preceded it—Mr. Charles Wye Williams. I am aware that the feelings entertained by Mr. Hall towards that gentleman will prevent his taking notice of anything that he may say or write; I, however, as his agent in carrying out all his transactions, venture to assure you, that the following paragraph is totally incorrect:—"My hot air furnaces have not done well, though he made several alterations, and we fell out." For, in the first place, neither Mr. Hall himself, nor I, on his behalf, have ever fallen out with a single person with whom he has had any dealings for his smoke-consuming apparatus; and, in the second place, not a single instance has occurred in which his furnaces, whether with hot or cold air, "have not done well." I challenge "A Manufacturer" to give his real name, and, whether it be Mr. Charles Wye Williams, or any other person, I pledge myself to prove him guilty of gross falsehood. In reply to the question of that person, I will only add, that Mr. Hall has authorised me to apply all his subsequent improvements, whether with hot air or cold air, without further charge for patent right, to the furnaces of all parties who have applied the apparatus agreeably to his first patent of 1836, which offer has been accepted by many of them to their great satisfaction.

London, April 9.

WILLIAM SMITH.

ABATEMENT OF THE SMOKE NUISANCE.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—I perceive, with pleasure, the insertion in your excellent Journal of last week of an extract from the minutes of the Nuisance Committee of this town, respecting a report from a part of their body of an inspection which they made of Mr. Samuel Hall's smoke-consuming apparatus, as applied to a thirty-horse boiler, at the Manchester and Birmingham Railway Station, in this town. Feeling a great interest in the important subject of smoke-consuming, I attended the above mentioned inspection, and can truly say that I was as much satisfied and gratified therewith as any of the members of the nuisance committee.

SAMUEL TURNBULL.

Manchester, April 13.

THE SMOKE NUISANCE.—MR. WILLIAMS AND MR. HALL.

TO THE EDITOR OF THE MINING JOURNAL.

Upon my arrival here the other day, my attention was called to a letter of Mr. Charles Wye Williams, in the last week's *Mining Journal*, triumphing over Mr. Samuel Hall, on the subject of the priority of their respective patents for the consumption of smoke. As I feel much interest in abating the nuisance of smoke—and, consequently, in the respective merits of the inventions of those two gentlemen—I have taken the trouble of going to the Invention Office, in Chancery-lane, to examine the specifications of Mr. Hall's several patents, and shall here confine my observations to those of 1836 and 1839, as they are prior to Mr. Williams's patent of 1839. I was really so surprised at finding Mr. Williams's bearing letter so at variance with truth, that I find it difficult to refrain from using such strong language as Mr. Williams merits. The truth is, that both of the above patents are as distinctly and as strongly specified for the admission of air in the divided form of jets as language and drawings are capable of describing. The patent of 1836 shows heated air sent into furnaces in such divided form and jets, the instance given by a drawing being a locomotive-engine.

The patent of 1839 also shows air so applied by jets, such air being taken from the ash-pit, and sent into furnaces, the same being, of course, cold air; the instance of this is given by a drawing of a marine-engine boiler. After having stated thus much, it would be idle, and waste of time to use one single argument with Mr. Charles Wye Williams, after he is having written an extraordinary and incoherent letter. Permit me to suggest to you, that as the Editor of a valuable publication calculated to promote the public good, by suppressing the cause of truth, you should render your readers (particularly those in the country) a good service by examining yourself the specifications of the Invention Office, of Mr. Hall, of 1836 and 1839, and that of Mr. Williams of 1839, and by repeating thereon. I am led to make this suggestion, in consequence of your having the bottom of Mr. Williams's letter, which you are now publishing, but you were aware of the real nature of the above-mentioned patents.

Tottenham Hotel, London, April 14.

A CORRUPT JOURNALIST.

THE AERIAL MACHINE AN ABSURDITY.

TO THE EDITOR OF THE MINING JOURNAL.

SIR.—The description of the "aerial machine," in your last Journal, which, I am satisfied, was never written by yourself, is the description of one of the most preposterous attempts to obtain the power of aerial transit, by machinery, that has yet been made. The machine does not possess a single element of success; and the means of flight proposed, prove the projector ignorant of the common principles of dynamics. Impulsion to the machine, for the purpose of projecting it into the air, will be given, it appears, by means of a fixed steam-engine and an inclined plane. Of the amount of propulsive force required, or to be given, we are not informed; but whatever it may be, it involves, in degree, the same result, or consequence. Now, admitting that propulsion down an inclined plane will project the machine into the air, what is to continue its flight beyond a determinate range? Projectiles meet a retarding force—uniformly increasing—that, sooner or later, puts an end to their flight, and returns them to the earth. To continue the flight of a projectile, a regularly increasing force of projection would be necessary; and it is naturally impossible to obtain such a force. The "aerial machine" is nothing more than a projectile; it has no element of buoyancy, and it must submit to the laws of projectile motion, just as strictly as a cannon ball—save that its descent would be retarded by its great extension of surfaces. The vane, or fan, on the principle of the Archimedes propellers, fixed at the hinder edge of the machine, may exert a force equal to the force that it is supposed will deflect the machine from the inclined plane; but the force exerted by the fans must, of necessity, be uniform; and, being so, it will not continue the flight of the machine one fathom further than it would go with the fans at rest. The machine falling in the main essential to success—the power to overcome the effect of gravity—it would be useless to offer any further remarks on it. But is not the thing a stupendous hoax?

Liverpool, April 7.

B. DONOVAN.

THE PHILOSOPHY OF FLIGHT.

TO THE EDITOR OF THE MINING JOURNAL.

SIR.—"Man," says the learned Lord Bacon, "is the servant of Nature." Such is truly the case, while he is standing at the portals of Knowledge, but, vested with power derived from observation and the expansive workings of the mind, he assumes a prouder position, and becomes the "Lord of Nature"—rendering her tributary to his waste and purposes. In this age of discovery nothing seems impossible to accomplish—ideas generated in the darker ages, and laughed to scorn by succeeding generations, have been triumphantly carried out, and have given rise to ideas still more extravagant, which, although exciting only the smile of ridicule or scepticism, bid fair, at no very distant period of time, to be realized to their utmost extent. Of these the power of traversing the air is not the least interesting; it is, indeed, one of the proudest triumphs of intellect—the last link required to bind man together as one vast social family, and the tollman by which we may hope to banish ignorance, and its concomitant train of miseries, from the earth. Many expedients have been tried, and the inventive powers of strong minds have been tasked to supply the deficiency of wings, but the difficulties attending the perfect imitation of the beautiful mechanism of life, have been such as to baffle the wisest and best laid plans. We are told that this grand desideratum is at length accomplished, and that a machine, built after the mechanism of birds, is now preparing to compete with them in solid air, and that the experiments hitherto made have placed ultimate success almost beyond the possibility of doubt. Most heartily do I respond to the wish, that, in success, all present doubts will be banished. Men of vivid temperament already behold the regions of the air tenanted by their fellow men, and space obliterated by velocity and duration of flight; but the philosophic looker on penetrates the glowing veil of enthusiasm, and, proud of the anticipated triumph, would fain secure it by guarding against the possibility of disappointment. It is said that Mr. Henson's plan is mathematically correct, being strictly in accordance with the laws of flight: it represents a bird with expanded wings and tail, and so far it is correct; but, in my opinion—although, in this, I may probably stand alone—something more is wanting to secure complete success. He who first built a vessel most probably took as his model one of the Bony tribes—the tapering head, the peculiar form of the body, and the expansive and pliant fins—adapting its parts to the various duties he designed it should perform; in the form of a raft, the passive resistance to the impelling action is such as to render it useless to all purposes of commerce, and, indeed, in no other form than that at present used could ships or boats have been of any general service to mankind. The same philosophic rule must be applied to aerial machines. In the model before us the wings are rigid, and, although adapted to float in the atmosphere, they are in this state a dead weight, added to the weight impelled onwards by the revolving fans, resembling, in fact, a steamship sailing side-ways, the fans being placed at the head and stern, with this increased disadvantage, that, whereas the ship is floating on the aqueous medium, the aerial machine is floating within the aerial medium, in which there are many contending currents, not like the steady currents of the ocean, but perpetually changing and uncertain in their nature. We will suppose the machine, loaded to the full extent contemplated, high in mid air; the propellers are put in action to overcome the resistance of the air, not only to the body, but to the wings, and here appears to me the insurmountable difficulty; for the machine cannot, with propriety, be compared to a hawk floating on the wing, the latter being charged with atmospheric air in every part of its body, and its buoyancy being further increased by the slight but certain motion of its wings; and, again, advancing on its way, its wings perform the like office with the limbs of a swimmer in water, expanding and contracting—far, if the arms were stretched rigidly out from the body, the muscular action of the legs would be insufficient to urge the body forward. Again, the wings and tail are placed horizontally; now, it is well known that the aerial currents are constantly meeting, and, in such cases, the weaker is borne, with greater or less violence, to the north, producing the phenomena of whirlwinds, pillars of sand, &c.; the consequences would be immediate and violent precipitation to the earth.

It appears to me—with due deference to the trials made on a small scale, that the elements of success are still to be developed; that motion must be imparted to the wings, that the tapering neck should be added, and that every portion of the huge machine should be interwoven with air cells, charged with buoyant air supplied by the steam-engine. The present attempt deserves well of the public; and I trust Mr. Henson will realize better first fruits than generally fall to the lot of first discoverers.

April 6.

HARVEY.

ON MINERAL DEPOSITS.

TO THE EDITOR OF THE MINING JOURNAL.

SIR.—The discussion on mineral deposits, in your valuable Journal, has been everything but profitable to the practical miner, seeing there is, in geology, problems which have not been solved, and upon which geologists, with his expansive mind, might reason for ages, and think that to this conclusion—there are lengths, and breadths, and depths, which we cannot fathom. Not so, exactly, with the practical part of mining. It is well understood that the miner, in the progress of his undertakings, is frequently met with difficulties, and such as must be encountered, and which at once test his skill and experience; and, though similar necessities would direct to a uniform mode of operation, still that does not always become his concern. Your Journal might yet become a channel through which much useful information might be communicated and obtained, if practical miners would direct themselves to those propensities peculiar to their own inclinations, and often derogatory to their own interest. Any improvement in the mining interest may now be considered of the greatest importance, especially to those miners connected with iron works, whose competition has reduced that useful article to such a value, that a remunerative price can scarcely be obtained. I hope Mr. Mackintosh's proposition will attract the attention of those engaged in the manufacture of iron; and, if any good should be effected thereby, we doubt not that he will be rewarded with the approbation and praise of all great and good men. Nevertheless, the prosperity of an iron-work must chiefly depend upon its natural resources, the method of extracting them, and the care taken in their different processes of manufacturing. If there is anything which gives the Welsh ironmaster the advantage, it must be the exhausted state of the minerals. I can not even say that there is a better mode or system of mining adopted in Wales than in the Stafford and Shropshire coalfields; the experienced and overworked state of most mineral beds will not allow of such extensive openings as in those districts, which continually throw a weight upon the face of the workings, and expends a part of the labour and toil of the miner. I do not know a work in Wales where the mode of "long work" has been successfully put in practice, with the exception of Blaencynon—I am glad to find that your able and practical correspondent, Mr. O. Thompson, intends to return practical mining.

A NORTH WALES CHAMBER.

Aberystwyth, April 18.

ON THE ORIGIN OF BASALT.

TO THE EDITOR OF THE MINING JOURNAL.

SIR.—Basalt is most extensively distributed over the upper crust of the earth, the term being loosely and inaptly applied to a vast variety of compounds, varying from each other, in mixed qualities, composition, external and internal character. Columnar basalt is almost invariably composed of terrestrial vegetable earth, commingled with varying quantities of animal matter, silica and alumina forming the basis and cement; and the bodies combined with this basis are, in general, lime, soda, oxide of iron, and water—the alkaline earths being present in their neutral state.

This variety of basalt is declared by geologists to be of volcanic origin; but, in receiving this explanation, it is necessary that the inquirer into nature bear in mind that volcanic action is the proximate cause of change, and not of production; and that, admitting the material of basalt being abstracted from the superficial beds of the earth, we find that it undergoes little change other than in the disposition of its elementary qualities and atomic arrangement of parts, the change simulating to that of earth into clay, or of clay into clay slate; the material ejected from the inner beds being, *de facto*, the same, under the several circumstances of change: the volcano casts forth mud in a state of ebullition, and so far causes chemical and mechanical changes; and the sudden cooling down of the boiling mass sometimes occasions its conversion into columnar basalt, but not necessarily so, for, generally speaking, it retains its form and qualities as earth, unimpaired by the action of fire; or, indurating from the liquid state, it is converted into common basalt. The more numerous varieties of this species of rock are earths simply consolidated by the agency of atmospheric heat, the nature of the material and the degree of heat determining the nature of the rock; thus, in the warmer climates of the earth, basalts are much harder and more diversified than in temperate regions, bituminous matter being more or less abundant in all of them, and in some species it is the chief constituent, which could not be the case had it undergone the heat of fusion; the black bituminous basalts of Upper Egypt, abounding in localities undisturbed by volcanic action, and exposed to continued intense atmospheric heat, become, in common with other species of rock, highly indurated and sonorous; they embrace few terrestrial products, being chiefly composed of lime, soda, magnesia, and iron—silica forming the basis and cement of the whole. The like kind of basalt abounds throughout Asia, and in the East Indies; it is extensively used by the natives for building of temples, and manufacturing heathen deities. The smaller basaltic nodules, which form in the rich black soils of tropical lands, pass through several stages of change, in common with other species of stones, and, eventually, are converted into a beautiful species of jasper, or agate, very common throughout the province of Satarah, in Upper India. Basalt passes by transition into marble, jasper, porphyry, and other species of rock; it presents every variety of atomic arrangement, its physical condition depending upon local influences as well as upon its peculiar qualities, the hardest and most beautiful being the result of intense tropical heat.

April 12.

GEOLOGY—NEW SYSTEM OF PHILOSOPHY.

TO THE EDITOR OF THE MINING JOURNAL.

SIR.—Mr. Montague says, and says truly, "the records of the past are in the hills, the valleys, the mountains, and the plains—all are the relics of past generations, all speak the one universal language; but who can read this language? who will interpret the writing upon the walls of our dwelling places?" The child of Nature," Mr. Graham Montague. Hear him, then, ye infants! for he says that, "with the wisdom of 6000 years accumulated and placed at your disposal," "ye still remain profoundly ignorant of Nature's operations." But now "The Book of Nature is opened," we read thus:—"The earth is a reproduction of form from a previously existing," "in and throughout the whole of which is no plan marked out, no design manifest, nor is there ought to lead us to infer that it was produced merely for the purpose of the creatures that inhabit it," and "the appearance of man upon the earth has caused no material alteration in the progressive advance of production; the relation of man to this planetary body is the same as that of animals—he is endowed with like feelings, and is the subject of like vicissitudes; like them he lives, and moves, and breathes—a vital piece of mechanism." "Bearing in mind," as Mr. Montague says, "that the senses are but the imperfect medium of communication, and being the instruments of power, but without power of themselves, they are apt to be deceived;" and, notwithstanding, "the eye conveys to the mind a knowledge of form—touch gives the impression or idea of substance—smell gives the idea of peculiar odour—and taste of a peculiar quality; even with this conjoint evidence of the senses, mind is in danger of being deceived." Bearing in mind, and that it is "the child of Nature" who says it, follow me; let us dip our wooden bowls into the fountain opened to us, let us not "refuse the sweet refreshing stream."

The question with the philosophic inquirer is, not whether such rocks have been produced from beneath—nor whether they have been acted upon by internal fire, or by external atmospheric heat and electricity—but, what is composition, and from whence is derived the material of which the stratum is composed? To this the chemist must adhere—in this the geologist, whether he likes it or not, must conform.

Some fifteen months have rolled over our heads since the geologist of Nature, having destroyed—and I say it adventurously—the theories of the Smiths and the Combehears, the Phillipses and the Bucklands, the Marchbanks and the Lyells, stood forth and proclaimed himself the champion of a new system, based on the Ocean, which is denominated "the primary and fruitful womb of production," and upon Lime, produced by life, or the "living principle manifest in defined action." I will not ask whether "Geologists," whose letter "On the Origin of Calcium" appeared in your paper of the 23rd ult., is Mr. Montague's new name; for, seeing that he uses the same words as the author of the new system, without acknowledgment, I have a right to conclude that they are one and the same. All former geologists have confessed that it is a difficult problem to account for the enormous masses of carbonates of lime. Mr. Montague has cut the matter very short; he makes the calcareous, the millstones, the corals, the corallines, create it—I use the word in the sense that "his child bearer," "J. S. D.," has admitted to be strictly the meaning of the word. It is absolute creation out of nothing; for, here the philosopher—"Did animals secrete it simply by abstraction from the medium in which they exist, then would its presence be manifested by general distribution over the whole bed of the ocean waters." That is well said—far, or shall we say, *de facto*, but here it is an undecomposed something—a monadite if you will—as "earth of calcium," although of this calcareous we know very little. Mr. Montague says of it—"In speaking of this material, I must observe that the result, as calcareous, is a chemical result alone, and apart from Nature, for in an instance as we find it naturally in this homogeneous state." And Mr. Brande says of it—"The existence of calcium in the metallic form of lime was first demonstrated by Davy in 1808, and our knowledge of calcium is almost limited to this single experiment," and it has never been obtained in sufficient quantity to ascertain its general properties"—so that, in point of fact (and we are all matter-of-fact men, in spite of "J. S. D.'s" attack upon the "absurdities of the immaterial school"), we know very little about calcium, either in the laboratory of Nature, or that of the chemist; and, by the way, it may not be out of place to remark here, that it is a carbonate of lime we have to account for, by creation or secretion.

Calcium proper 30
And its oxygen 8
Carbon 6
And its oxygen 16

I have to request your readers will bear this in mind, for upon this subject I shall have something to say when I come to Mr. Montague's proposed "carbon"—an elementary substance," according to the authority of all the chemists, and assigned by Mr. Montague, who tells us that "the whole of organic nature develops carbon, which, from being generally considered to be a basis and basis, has hitherto been considered (although erroneously) as the fourth elementary principle." Again—"Carbon is the first product of generation not belonging to the elementary principles, but proceeding therefrom." Well, Sir, the problem is solved, and we have the secret of Mr. Montague, that, preceding as it may have been in other philosophies, it was, to him, one of those "philosophic truths so plainly, so extensively, manifest to his senses, as to every truth and conviction with it;" "the powers of human art (the continuous) cannot produce all the phenomena developed by the chemical action of life, but, as is instanced in common, it produces enough to convince the philosopher that the primary basis of the animal organization is a result of simple elementary action, and belonging primarily to the waters, but reproduced by the chemical and mechanical action manifested in the living body, within the waters." A few words about monads, and I will show your readers how Mr. Montague has proved to his conviction the end and the apple tree. American, like English, seems to have rather puzzled the chemists. Brande has told us that the base is a metal, but his views have not been generally adopted. Two parts of lime, and one of acids or acids, subjected to a gentle heat, produced the white ash of the old school, but the theory of the decomposition is somewhat complicated (see Brande), but it will be better understood when the nature of lime is explained." And "an immense production systematically during the decomposition of many mineral substances, but there are some anomalous cases of its resolution and apparent production which are not easily explained."

Learning unknown for the present, we will proceed. "The salt (says Mr.

Montague) develops formic acid, the apple develops malic acid; such are peculiar to their respective organic bodies, they are not derived from the soil on which they repose; in like manner calcium is secreted by organic and terrestrial organic bodies, being a result of chemical admixture, organic action determining the result." Now, let us ask the chemists—"Gehlen, and more lately Berzelius, have shown that formic acid is a distinct compound, and Döbereiner has published some curious facts respecting its artificial production, he has shown that it is the result of the peroxidation of several vegetable compounds," &c., so that the salt may get it from vegetables, and I doubt not, does secrete it proper—that is, separate it from vegetables. The philosopher is equally unfortunate in dealing with the apple tree, for although he says truly, and I admit it, that "the link of animal and vegetable life is so finely interwoven, as to (appear to) be inseparable," still his connecting the ant and the apple tree is a very violent proceeding, and not quite *selon la règle*; and, then, after all, the malic acid is not peculiar to that organic body—the apple tree—for the same acid exists in the berries of the mountain ash and in the house look; nor is the formic acid peculiar to that organic body—the ant—for it exists in, and can be separated from, tartaric acid and peroxide of manganese. Here I leave the new system for the present week.

April 4.

PATERA LIGNEA.

THE "CHOKE-DAMP" OF MINES.

TO THE EDITOR OF THE MINING JOURNAL.

SIR.—The "choke-damp," "black damp," and "after-damp" of the mines, is the carbonic acid gas of modern chemistry. It is sometimes developed naturally in mines, and is the inevitable product of an explosion of "fire-damp." In the former case, were it allowed to flow along a channel provided for it (which it would do, in virtue of its superior specific gravity), into a tank, it might be easily pumped out, like water, by the engine. It is, in the latter event, however, that I am anxious to impress the mining interest with the means that may, most certainly, be successfully employed in restoring the victims of asphyxia, and in approaching the "wastes," subsequent to an explosion. Cold water should be constantly forced, by a small "forcing-pump," through a "nose," by the individuals in their approach. This will, at once, condense the noxious gas and restore the victims. It is not generally known, that a comparatively small quantity of carbonic acid gas acts on the brain like a narcotic poison; and its instantaneous neutralization, by a small stream of cold water, let fall on the occiput, is most remarkable.

J. MURRAY.

MANUFACTURE OF BAR-IRON—LARGE CASTINGS.

TO THE EDITOR OF THE MERTHYR GUARDIAN.

SIR.—"An Old Roller" once more intrudes on your kindness in begging you to insert this letter in your valuable paper, by doing which, you will allow him the opportunity of proving that the statement he gave in his former letter, of the bars rolled at Dowlais and Cyfarthfa, was correct, and that he was not led away from the truth by partiality, as the "Pennydarren Operative" would wish you to believe. My only reason for troubling you with my first letter was in consequence of having seen in your paper the account of the Dowlais bar, which was so given that every one who read it might have taken for granted, that it had been fairly rolled from a pile, as bars usually are, and not previously worked into a bloom under the hammer, which every one knows (who has the slightest knowledge of the process of manufacturing bar-iron) makes all the difference in the difficulty of rolling such bars.

I will now give you the true account of both bars, which I have obtained through the kindness of some of those persons engaged in the working of them. First—The Dowlais pile, which the "Pennydarren Operative" makes to weigh 3180 lbs., is not correct, for it was not weighed at all—consequently, his statement must have been guess-work. Secondly—This pile was heated and worked under the hammer five different heats, until it was hammered into a solid bloom of about nine and a half inches diameter; it was then reheated, and put into the rolls, which reduced it to eight inches bare diameter, and 14 feet 1 inch long. Thirdly—As to its straightness, any one could have satisfied himself on that point, as it lay for five weeks after it was made on their mill floor, and, in the opinion of those who saw it, "twenty-five forge smiths" would make but a very poor impression upon the "slight curvature" as described by the "Pennydarren Operative." Knowing this, and also that a bar 6 1/2 in. diameter, 35 ft. 3 in. long, was rolled at Cyfarthfa in the usual way—viz., passing through the roughing and finishing rolls in one heat fairly from the pile, induced me to lay before your readers a true account of the manner in which they were made, and also to show that the Dowlais Company had not performed so very great an exploit, or anything more than their neighbours could do, as they would wish the public to believe.

I presume the "Pennydarren Operative," wrote with a "Paddy's pen," which enabled him to draw such a beautiful line for the Cyfarthfa bar. It was rolled on Saturday evening, the 25th ult., and the thousands who came to see it from the neighbouring works, from six o'clock the next morning until dark, pronounced it to be as straight and as beautiful a bar, in every respect, as could be seen. Allowing him to be correct in the weight and dimensions of the Dowlais bar, it will be at once seen, by observing the following, how far he is correct in the Cyfarthfa bar. A bar of iron 8 1/2 inches diameter, and fourteen feet long, contains 5'19 cubic feet. Divide 2594 lbs. (his own weight of the Dowlais bar) by 5'19, and you have 499'8 lbs. the weight of a cubic foot of iron, consequently, a bar of iron, 6 1/2 in. diameter, and 35 ft. 3 in. long (the accurate dimensions of the Cyfarthfa bar) contains 5'3 cubic feet, which multiplied by 499'8 lbs., will give 2649 lbs., the weight of the bar made at Cyfarthfa, which, according to the "Pennydarren Operative's" own account is 55 lbs. heavier than the Dowlais bar. The above shows what a strong adherent he is to your excellent motto—"Truth against the world," which he, doubtless, finds easier to quote than practice. Had he taken the trouble to inquire, he would have found that one bar only of 6 in. bolt, fourteen feet long, was made at Dowlais, and not thirty tons of 6 in. bolts, varying from fifteen to eighteen feet long, as stated by him. I will also add, that I have no doubt the "Cyfarthfa folks" can vie with their neighbours in manufacturing bars, but in "throwing the sledge," they have not the slightest chance.

Tydfel's Well, March 29.

AN OLD ROLLER.

ELECTRO-PLATING AND GILDING.

At the Society of Arts, on Monday, Mr. Pellatt described and illustrated the new art of electro-plating and gilding, according to Messrs. Elkington's process. Several specimens were placed upon the table, and during the lecture two old candlesticks were plated, and a silver watch-case was gilt in a few minutes. It is immaterial what metal is used for articles to be plated by this process; a compound metal, composed principally of nickel, however, is preferred, which, when plated with silver, can scarcely be distinguished from the solid metal. Upon the wax model is first deposited a copper surface, by the electro process; the wax is then melted out, and thus a perfect mould of copper is obtained, into which is deposited silver of any substance that may be required. The copper is then removed, by dissolving it with acid, and the article required is obtained. If the original model is in metal, an elastic mould, made of glass and treacle, is used, by pouring the composition in a liquid state upon the model. By a late improvement, the proprietors have the means of giving a metallic conducting medium to this composition, and to other substances, without the use of any external application, as black-lead, &c. The first thing, before plating or gilding, is thoroughly to cleanse the articles from all grease or oxide, and this is done by boiling them in caustic alkali, and scouring them with sand and dilute acid; they are then washed and dried, and a copper wire being attached to them, they are placed in a metallic solution of the metal required to be deposited. The entire article is then suspended by a copper wire in the solution of silver, or metal, the wire being connected with the negative pole, while a silver plate, suspended in the same solution, is connected with the positive pole of the battery. The process of gilding is similar to that of silvering, except that the gold solution requires to be heated while the process is proceeding. Great care is required in the arrangement of the batteries, the object being to decompose the solution easily, and, at the same time, to produce a firm, smooth, and regular deposit of the metal. The secret of the manipulation consists in the correct balance of power, between the battery on the one hand, and the strength of the solution, and the number of articles to be deposited on, on the other. The solution for gilding is prepared by dissolving the gold in a mixture of pure nitric and acetic acids, the product being a chloride of gold; after evaporation, this is converted, by means of an alkali, into the oxide, which oxide is dissolved in pure cyanide of potassium. The solution of silver is prepared by dissolving pure silver in nitric acid diluted with distilled water, and similarly treated with the cyanide of potassium as in the gold solution.

BRIDGES BUILDING.—(From a correspondent).—We understand that Mr. Dwyer has been applied to by the Russian Government to erect some bridges of that sort upon, single bearing, in Russia and Poland. We should be glad to hear of some one taking up the question of a bridge at the Old Passage; it is perfectly practicable, but the Russian parties have been so disappointed by Mr. Street at Colwyn Suspension Bridge that they seem to fear to embark capital in bridges; but, from what we have seen and known of Dwyer's practice, we are satisfied that the Severn ought not to stop Wales and England any longer.

REMARKABLE BRIDGES.—In addition to the bridges constructed under this head, in our last, we may mention that a suspension-bridge, said to surpass all that has been seen, is to be constructed at Vienna, across the Danube. It will be 1420 English feet in length, with only one pier in the river.

NEWBURN BRIDGE RAILWAY.—On Thursday, the 26th ult., the opening of a branch railway to Messrs. Wood and Co.'s millery, near Dunscore, and joining the Maryport and Carlisle Railway at Dunscore Bridge, was celebrated by the firing of cannon and other rejoicings; and we are informed that another branch will shortly be opened from a new pier, near Dunscore, now striking by Messrs. J. and T. Wilson. Surveys are also going on for a branch to the line of the F. & L. S. System, &c.

St. Just, The 10 of June, 1892, Mr. Richard person, Sir, the kind of
 friend on the West of St. Ja. St. by the House, Mrs. Tinsley, which is the
 memory of the other I think on you of Hugh was, with money from
 to him for wages in West Tinsley, and the kind of two pounds
 changed on your West Bank, being one month and two pounds, for which
 on here every Hugh was under and of my hands, when I was of London
 few days before you went to London last time, and in the thing you will
 think you see their pictures, and the money from, over that of two pounds
 that Hugh was on his letter in your hands.
 [The "oversee of the post" was a post paid at 10 p.m.]

